
Education partnerships help students succeed

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Los Alamos National Laboratory's education partnerships in Rio Arriba County were recently recognized when the Rio Arriba County Commission presented Laboratory Director Charles McMillan with a proclamation thanking the institution for its efforts to enhance regional science, technology, engineering and math (STEM) education through faculty and workforce professional development, student internships and initiatives to deepen the public understanding of science.

The proclamation also acknowledged the Laboratory's sponsorship of STEM-related community events, such as the Future City Competition; the New Mexico Electric Car Challenge; the RoboRAVE International in Albuquerque; the Northern New Mexico RoboRAVE Rally in Española, which started in March 2014; and the regional and national Science Bowls.

Janelle Vigil-Maestas, education specialist in Los Alamos National Laboratory's Community Programs Office, plays a key role in the Laboratory's education outreach efforts and particularly enjoys the partnership aspects of her work.

"Each partnership would not be possible without a multitude of people from inside and outside the Lab," Vigil-Maestas said. "The creativity, talent and enthusiasm everyone brings to the shared goal of wanting to help students succeed are a daily inspiration to me."

Española YMCA Teen Center

Vigil-Maestas works with school officials, teachers and event organizers throughout the year, but she began her RoboRAVE International partnership with the Española YMCA Teen Center on the spur of a moment after she had ended up with a spare robotics kit and phoned Teen Center director Ben Sandoval to offer him the set.

"That was in early 2013, and the RoboRAVE International was less than a month away," Sandoval recalled. "Even so, the Teen Center students I spoke with were immediately interested and accepted the challenge."

Sandoval and several of the boys quickly formed "Team Intergalactic" and began to build their robot, which they named "Galactabot."

"Within days we contacted Española Mayor Alice Lucero and asked whether we could go before the Española City Council to share the great news," Sandoval explained. "At the Council meeting, we received a standing ovation although we had not even won a prize yet, and one City Councilor even volunteered to pay for the students' hotel rooms. Another City Councilor offered to pay the RoboRAVE International registration. We were off to a terrific start, and the morning we left for Albuquerque, the owner of a local restaurant waved us down and gave the team a free breakfast meal."

Team Intergalactic found competing with 1,400 students from 10 countries long and grueling, but as soon as they got back to Española they asked Sandoval whether they could go again the following year.

By 2014 the Española YMCA Teen Center had caught the RoboRAVE fever for sure. The center built the a-MAZE-ing challenge's wooden tracks for the first Northern New Mexico RoboRAVE Rally, and the tracks were used for the international event as well.

Teams from the Española YMCA Teen Center won prizes at the 2014 RoboRAVE International and again in 2015. The Rio Arriba County Commission recognized the Española YMCA Teen Center's robotics teams for their accomplishments, and Team Intergalactic was recognized by the Española City Council.

Santa Clara Day School

After Vigil-Maestas emailed information about the 2015 New Mexico Electric Car Challenge to Santa Clara Day School, a participant in the Laboratory's Math and Science Academy, sixth-grade Santa Clara teacher Diane Chavarria mentioned the competition to her students.

As Chavarria tells it, it was a quiet voice in the back of the classroom that said, "Ms. C, let's take part in the competition. We can build our own car that represents Santa Clara Pueblo."

Chavarria and another Santa Clara Day School teacher, Rose Naranjo, organized biweekly after-school meetings for interested students and with Vigil-Maestas' help found a Los Alamos National Laboratory mechanical engineer, Jude Oka, to provide guidance and support.

After two months of planning and hard work, Chavarria and Naranjo were able to take two teams of four students each to Albuquerque. The students competed with one car that looked like a mouse and another one sporting Native designs.

"The gym at Albuquerque High School was organized into two race tracks," Chavarria explained, "and there were many middle-school and high-school students from across the state, including Portales, Las Cruces, Española and Los Alamos."

The Santa Clara students earned the New Mexico Electric Car Challenge's Team Award, but they valued their event preparations and participation even more.

"I learned about aerodynamics," Santa Clara student Skye Smith said, "and about other areas of engineering that I am interested in pursuing when I go to college someday. I also now understand the importance of team work and collaboration."

For additional information on the RoboRAVE events, including the Northern New Mexico RoboRAVE Rally, visit the [RoboRAVE International](#) website. To learn more about the electric car challenge, go to the [New Mexico Electric Car Challenge](#) page.

For information about Los Alamos' Math and Science Academy, check the following articles in Community Connections: [Boosting Native American students' math scores](#) (May 2014) and [Math and Science Academy helps Native American schools empower teachers](#) (October 2014).

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